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FOOTING CASING TO IMPROVE POST IMPLANTATION

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(57) Claim

1. A substantially cylindrical casing incorporating varying shapes and diameters, used as a support footing for posts, such as sign posts or fence posts, which by it's design enables a post to be fastened into the casing with the use of a wedging collar which is forced into a position between the post and a narrow neck portion of the casing, as well as, by it's design, provides a method of releasing a fastened post for removal from the casing by a simple repositioning of the wedging collar downward from the narrow neck into a wider belly portion of the casing thus relieving the wedging pressure from the post.

AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT
ORIGINAL

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1. The specification should describe the invention in full and the best method of performing it known to the applicant.
2. The specification should be typed on as many sheets of good quality A4 International size paper as are necessary and inserted inside this form.
3. The claims defining the invention must start on a new page. If there is insufficient space on this form for the claims, use separate sheets of paper. The words "The claims defining the invention are as follows" should appear before claim 1. After the claims the date and the name of the applicant should appear in block letters.
4. This form must be accompanied by (a) a true and exact copy of the description, claims and drawings (if any) and (b) an additional copy of the claims.

(see Pamphlets explaining formal requirements of specifications and drawings)

TO BE COMPLETED BY APPLICANT

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Invention Title: FOOTING CASING TO IMPROVE POST IMPLANTATION

Details of Associated Provisional Applications: Nos: PK2450 24 September 1990

The following statement is a full description of this invention, including the best method of performing it known to me:-

FOOTING CASING TO IMPROVE POST IMPLANTATION

This invention relates to improvements in devices used in the implantation of posts such as fence posts or sign posts.

- 5 This invention is a substantially cylindrical casing which incorporates various shapes and diameters and is used in the support footing for posts, such as sign posts or fence posts, which by it's design enables a post to be fastened securely into the casing with the use of a wedging
- 10 collar which is forced into a position between the post and a narrow neck portion of the casing, as well as, by it's design, provides a method of easily releasing a fastened post for removal from the casing, by a simple repositioning of the wedging collar downward from the
- 15 narrow neck into a wider belly portion of the casing, thus relieving the wedging pressure from the post.

In prior art most installations of posts, such as sign posts and many fence posts, have been accomplished by simply standing the post in the centre of a relatively

20 deep hole made in the earth, the hole then being filled with concrete around the post. This, in effect, renders the post fixed permanently and makes removal both difficult expensive.

On some occasions a hollow pipe, with a larger inside diameter than the post, has been implanted in a concrete footing to act as a sleeve or boot in which the post is stood. In this sort of installation, often, a portion of the sleeve is left protruding above ground level to accomodate a horizontal crossbolt which would be fixed through the exposed stub of the sleeve and the post. This common system does not deter vandalism very well as the bolt is easily removed. Also, with this system, when the post is purposely removed, the remaining protruding sleeve stub is often a nuisance and/or a hazzard.

With this invention theft of the post is virtually impossible as no means of releasing the post from it's anchorage in the footing is visually apparent. Even a vandal with some understanding of the system would be deterred from attempting removal of the post as removal cannot be easily accomplished with conventional tools. However, a very simple proper tool will release the post with little effort in seconds.

With this invention, once a post is removed, the installation is flush with ground level with no protruding stubs and the mouth of the casing may be easily capped off, flush, awaiting future use.

Sign posts along roadways are often damaged by automobile accidents thereby needing maintenance service or replacement. The removal of these permanently installed posts is an endlessly ongoing, troublesome and financially
5 burdensome problem. The time, effort and money saved in this area alone, with this invention, will be considerable.

Fencing lines sometimes need to be relocated as with farm crop rotations and livestock control or as with crowd control at public gatherings. An easily removable, and
10 easily replacable fence post arrangement would be an invaluable asset in these and other instances.

To describe this invention in greater detail and to assist in better understanding, reference will now be made to the accompanying drawings.

15 In the drawings:

Figures 1 and 2 illustrate the general configurations and basic shapes of the invention. The casing 3 is in essence a hollow tube with varying diameters and conoidal shapes which when described segmentally includes: the top flare 4,
20 the neck 5, the belly 6, the shank 7, and the base cone 8.

Figure 1 is an illustration of the casing 3 with it's wedging collar 2 shown in vertical section.

Figure 2 is a dimensional view of the casing 3 and the wedging collar 2. Note the wedging collar 2 has a small segment removed from it's perimeter to allow for expansion and contraction of it's natural diameter.

5 Figures 3 and 4 illustrate the casing 3 with a typical post inserted into the casing 3 and with the wedging collar 2 encircling the post just above the casing 3. Note that the post is self centring at the base as it nests into the base cone 8 of the casing.

10 Figure 5, in vertical section, illustrates the holding position of the wedging collar 2 after the wedging collar 2 has been driven into the narrow neck 5 of the casing. This is a tight fit and the wedging collar 2 would be in this position before and during the implantation. The
15 neck 5 must be able to expand slightly as the wedging takes place hence the need to assemble before surrounding the neck with a footing medium such as concrete.

The conoidal top flare 4 helps the initial receiving of the wedging collar 2, guiding the collar into the neck.

20 Figure 6 illustrates the location of the wedging collar 2 after it has been driven deeper and into the belly 6 of the casing 3. When the wedging collar is down in the belly

of the casing, the collar 2 is able to expand, thus loosening it's grip on the post. Now the post may be easily lifted out of the casing. Once the post is removed from the casing the wedging collar 2 may be
5 retrieved through the opening at the top of the casing for subsequent use.

Figures 7, 8 and 9 depict a typical simple tool 9 designed to be used for both hammering the wedging collar 2 into the neck 5 and, by inverting the tool, for punching the wedged collar on down from the neck
10 into the belly 6 of the casing. The tool 9 is designed with a hinge 10 which gives the tool the ability to open (Figure 9) for ease in placing it in an encompassing position around the post. The tool is designed to be
15 heavy with a heavy wall extending to one end but with a segment of thinner wall at the opposite end. The tool 9 is able to slide freely up and down the post. The heavy walled end 11 bounds down against the wedging collar to drive the collar into the neck. Inverted, the lighter
20 walled end 12 fits freely into the neck and punches the wedging collar on down into the belly 6.

Figure 10 illustrates the tool 9 in position to drive the wedging collar 2 into the neck 5. Figure 11 illustrates the tool 9 in position to drive the wedged collar on
25 down into the belly of the casing.

Figure 12 depicts typical uses for the invention as an installation may appear with fencing posts or sign posts.1.

Figure 13 illustrates a completed installation with the casing implanted in concrete 14.

5 Figure 14 illustrates how a variety of post sizes 1
(diameters) may be accommodated in a given size casing
with the aid of a bushing type spacer 13. It is also
understood that wedging collars of varying wall thicknesses
could be used to the same end. Note again how the base
10 cone 8 self centres a variety of post diameters.

It is here realised that this casing according to this
invention is not restricted to any particular sizes,
diameters or lengths, but may be used in forms made to
match individual requirements such as in various post
15 diameters. It is also important that it is here realised
that this casing according to this invention may be made
of any of a number of suitable materials such as plastics,
rubbers, or metals and still achieve the same ends as
specified in this patent.

20 JAMES FOWLER HART
Name of Applicant

30 July 1991
Date

The claims defining the invention are as follows:

1. A substantially cylindrical casing incorporating varying shapes and diameters, used as a support footing for posts, such as sign posts or fence posts, which by
5 it's design enables a post to be fastened into the casing with the use of a wedging collar which is forced into a position between the post and a narrow neck portion of the casing, as well as, by it's design, provides a method of releasing a fastened post for
10 removal from the casing by a simple repositioning of the wedging collar downward from the narrow neck into a wider belly portion of the casing thus relieving the wedging pressure from the post.
2. The casing of claim 1 with a cone shape incorporated
15 at it's lower extremity to provide a self centring advantage when a post rests in the casing.
3. The casing of claim 1 and 2 with a conoidal flare in the upper segment to assist the initial receiving of the wedging collar into the narrow neck area of the
20 casing.
4. The casing of claims 1 to 3 wherein the casing is made of a suitable plastic material such as polyvinyl chloride or polyethylene.

5. The casing of claims 1 to 3 wherein the casing is made of a suitable metal material such as steel, brass or aluminum.

6. The casing substantially that of claims 1 to 5 but with a sectional shape other than round such as square, rectangular or polygonal.

7. A casing substantially as herein described with reference to the accompanying drawings.

Angela Cox
Brian Cox
Susan Hart
JAMES FOWLER HART

30 July 1991

10 Name of applicant

Date



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ABSTRACT

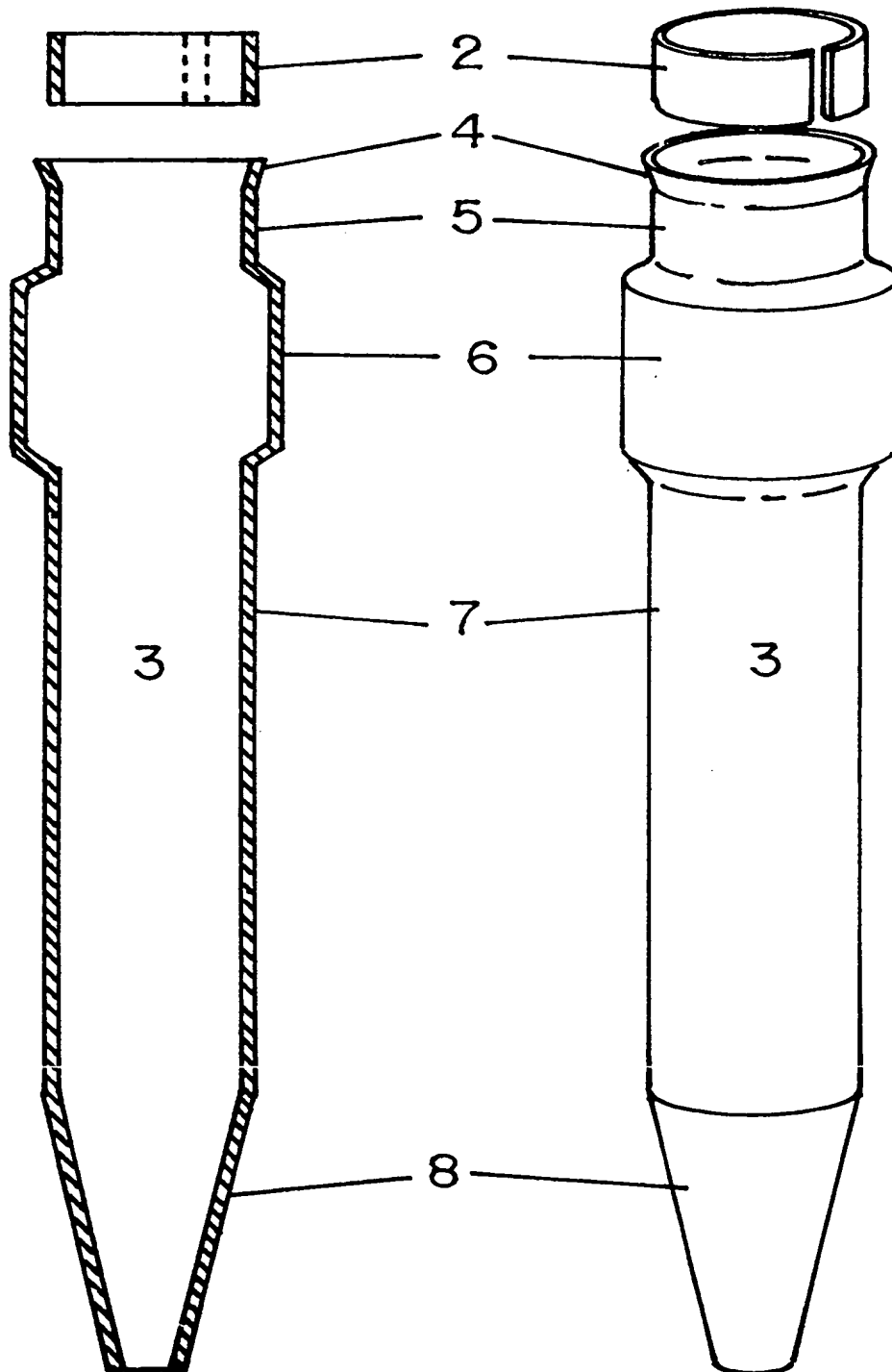
A devise which is a casing used as a sheath on the lower end of a post, such as a sign post or fence post, which locks the post into a footing while providing a method of releasing the post from the implantation without damaging either the post or the footing wherewith a post may be implanted and removed intermittently after the initial installation.

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FIG 1

FIG 2



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FIG 3

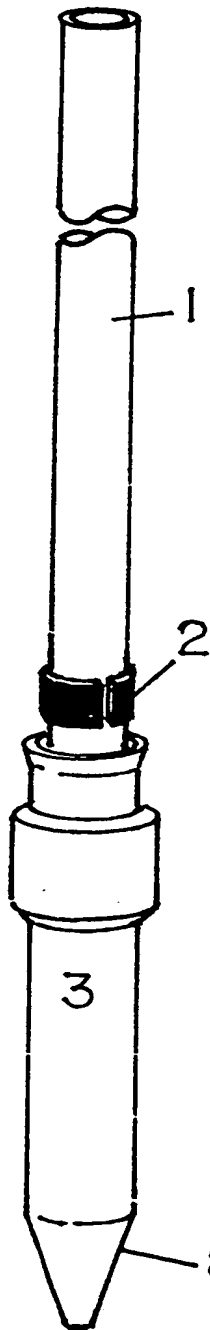


FIG 4

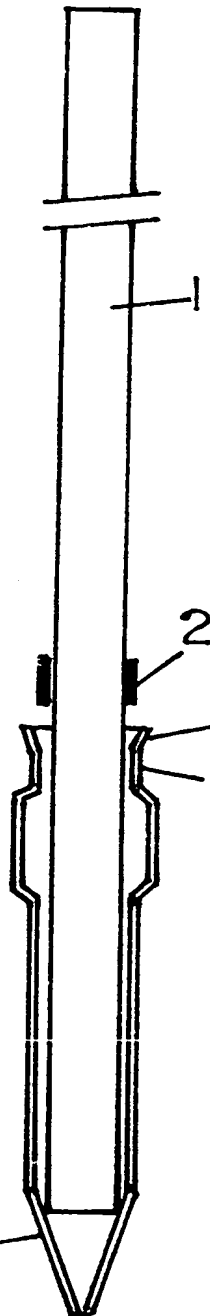


FIG 5

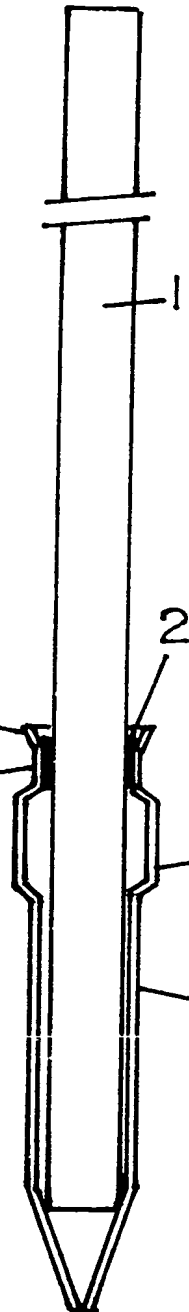
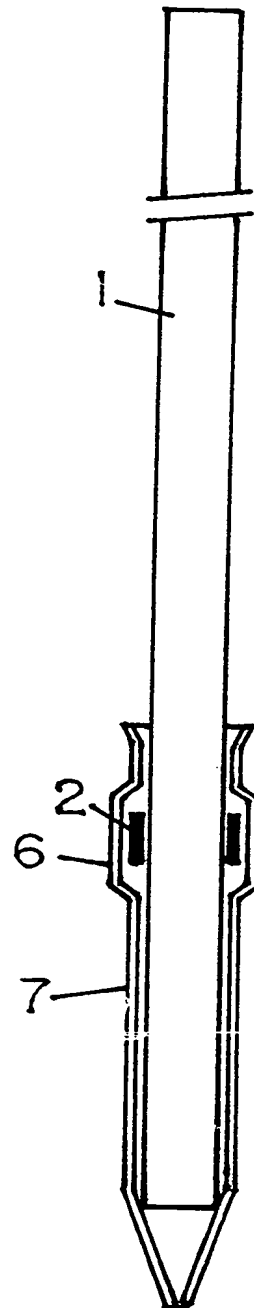


FIG 6



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FIG 7

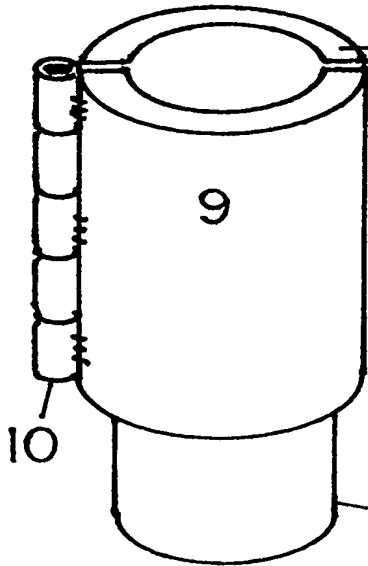


FIG 8

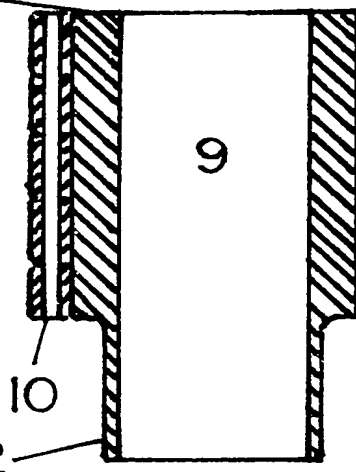


FIG 9

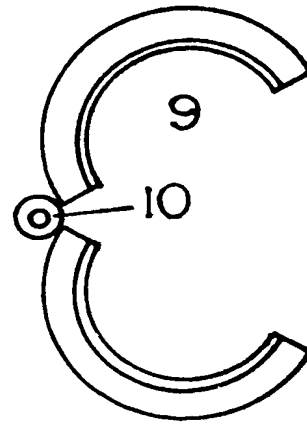


FIG 10

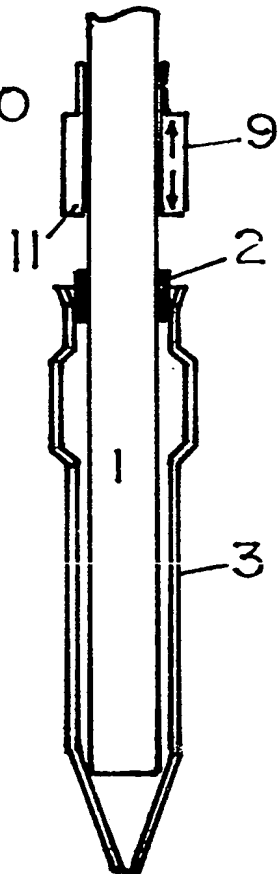


FIG 11

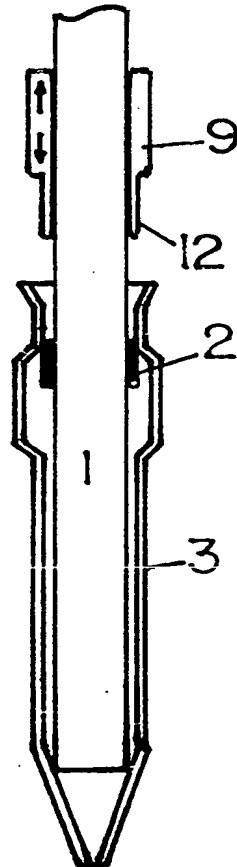


FIG12

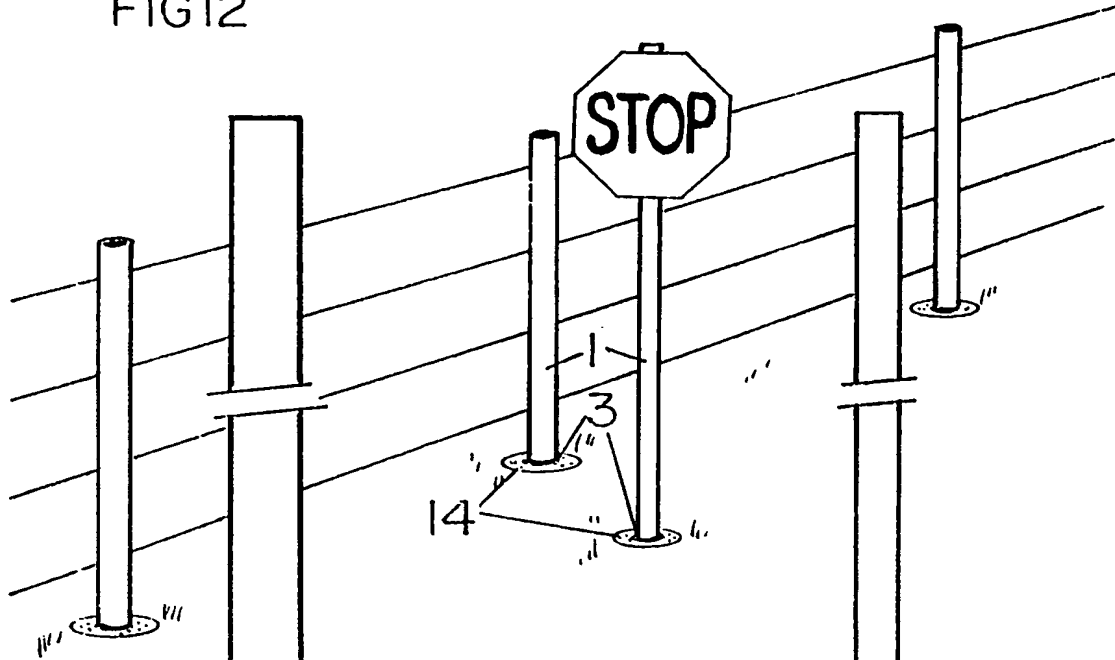


FIG13

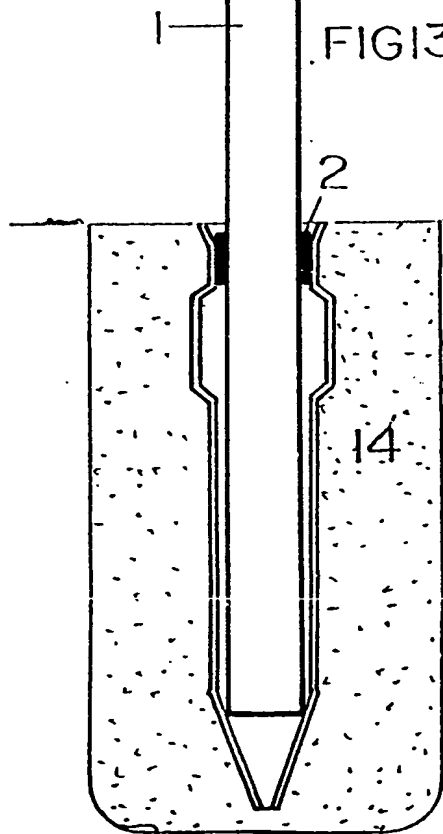
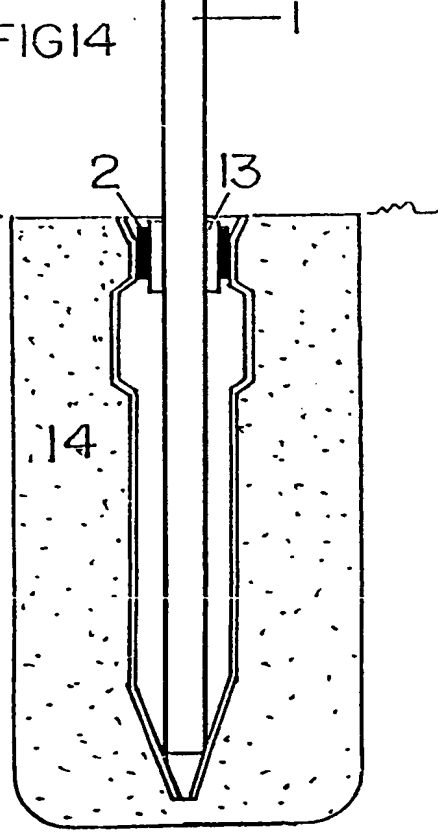


FIG14



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